



1756-114th Avenue S E
Suite 110
Bellevue, WA 98004
425/450-7726
FAX 425/450-8837

June 22, 1998

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JUN 24 1998

DEPT. OF ECOLOGY

Mr. Nnamdi Madakor
Washington State Department of Ecology
Northwest Regional Office
3190 - 160th Avenue S.E.
Bellevue, Washington 98008-5452

Subject: Results of Additional Sampling
BOC Gases - Seattle Acetylene Facility
7700 14th Ave. S.
Seattle, WA
Delta Project No. M097-750-3

Dear Mr. Madakor:

Delta Environmental Consultants, Inc., (Delta) presents the results of the Additional Sampling completed at the abovementioned site. Delta completed this work per the Scope of Work as approved by the Washington State Department of Ecology (Ecology) in their letter of May 7, 1998. Details of the work completed at the site will be provided in Delta's *Additional Assessment Report*, to be submitted shortly.

Delta resubmits its request for a No Further Action (NFA) determination for the Parking Lot portion of the site, as described in previous communications. Delta has determined that dissolved arsenic concentrations in the ground water below the parking lot are (a) below representative background samples for the vicinity, (b) not indicative of off-site migration, and (c) for the majority, are less than the MTCA Method A Cleanup Level.

RESULTS

The results of the most recent ground water sampling are provided in the following table.

Site ID	Location	Dissolved Arsenic (ug/L) per EPA 6020
MW-01	Adjacent to Active Pond	7.3
MW-02	Adjacent to Active Pond	3.3
MW-03	Adjacent to Active Pond	3.4
MW-04	SW Corner of Parking Lot	<1
MW-05	North End of Parking Lot	3.2
MW-06	South End of Parking Lot	4.5
MW-07	East Side of Parking Lot	6.3
MTCA Method A Cleanup Level		5.0

Delta has also researched dissolved arsenic data collected during the RFI conducted at the Boeing Company (Boeing) Plant II facility.

Site ID	Approximate Distance to nearest BOC property line (feet)	Dissolved Arsenic (ug/L) (sampled on/before 1/19/96)
BOEING-01	250	<1
BOEING-02	4	1
BOEING-03	25	18
BOEING-04	30	77
BOEING-05	312	9
BOEING-06	143	39
BOEING-07	160	<1
BOEING-08	99	17
BOEING-09	836	10
BOEING-10	802	3
BOEING-11	880	8
BOEING-12	742	<1
BOEING-13	700	<1
BOEING-14	820	15
BOEING-15	730	<1
BOEING-16	825	31
BOEING-17	686	14
MTCA Method A Cleanup Level		5.0

DISCUSSION

Ecology has indicated that the majority of the ground water samples collected from the parking lot area must contain dissolved arsenic below the MTCA Method A Cleanup Level in order to issue an NFA. Only one of the four (25%) contain arsenic at a concentration greater than 5.0 ug/L.

Ecology has also indicated that concentrations of dissolved arsenic in the ground water must not represent migration of arsenic off-site. The highest concentration of arsenic detected in the parking lot area (6.3 ug/L) is significantly less than the majority of the Boeing samples collected cross-gradient and in the vicinity of the site. The Boeing data also provide an estimate of local background concentrations, which are more representative of site conditions than the MTCA Method A Cleanup Level (also based upon Washington State 'background concentrations'). Please refer to the reference article by Welch *et al.* attached to Delta's *Subsurface Environmental Assessment* for a clearer understanding of the geological processes resulting in naturally-occurring concentrations of ground water in the Pacific Northwest that are greater than the MTCA Method A Cleanup Level.

Delta maintains that an NFA for the Parking Lot is warranted based upon the above ground water data. The locations of the sampling points are shown on the attached Figure 1. A copy of the preliminary laboratory data report is enclosed as well. Please do not hesitate to call me at (425) 450-7726 if you have any questions regarding this response.

Sincerely,

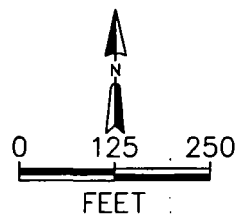
DELTA ENVIRONMENTAL CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read 'J. Peale', is written over the printed name and title.

James G.D. Peale
Project Manager

Enclosures: **Figure 1: Dissolved Arsenic in Ground Water
Laboratory Data**

cc : **Mr. Michael Resh - BOC Gases, Inc.**

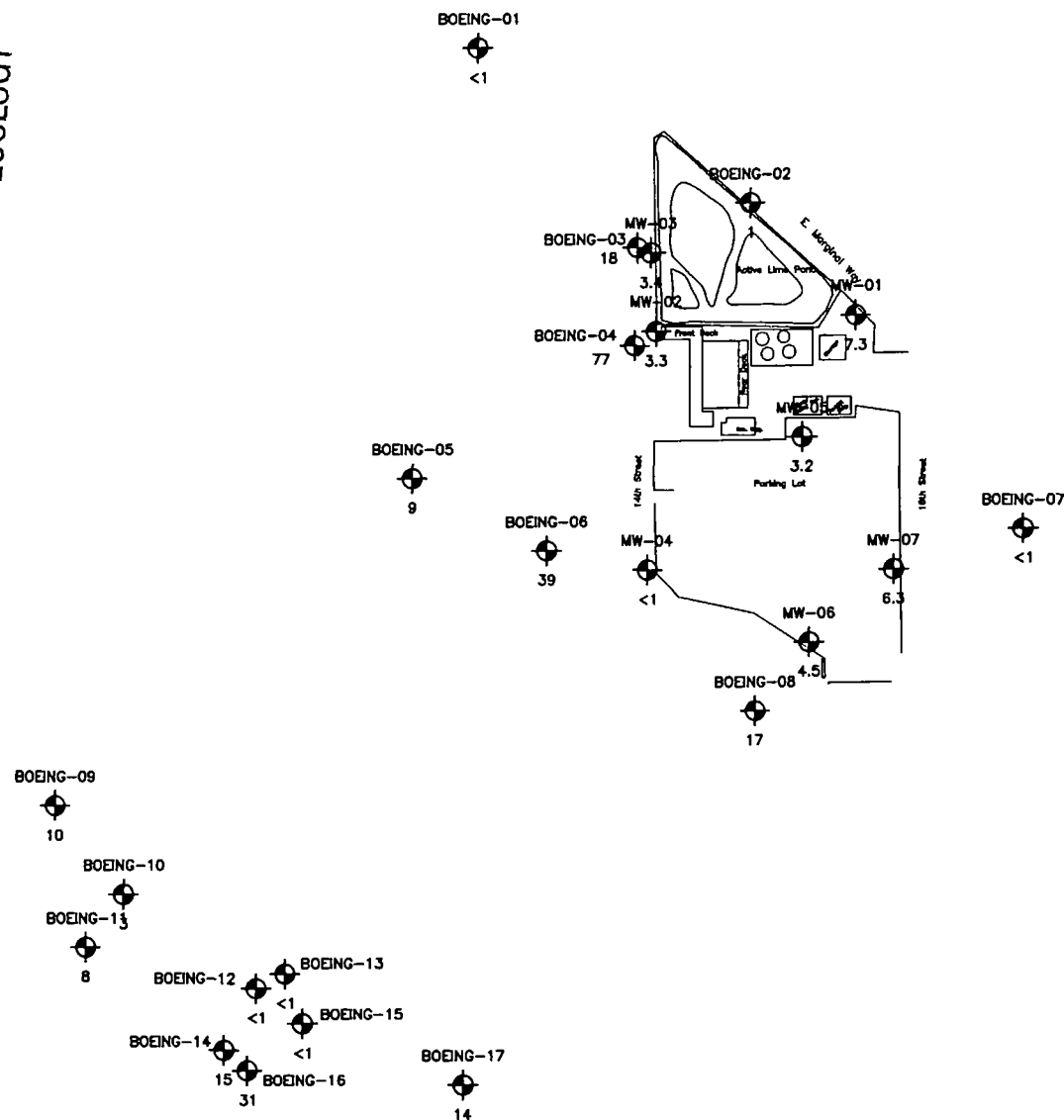


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LEGEND

MW-03
Monitoring Well with posted arsenic concentration
1.5

Duwamish River



TITLE:
Dissolved Arsenic in Ground Water
BOC Gases and Vicinity
Seattle, Washington

DWN: jgdp
CHKD: jgdp
DATE: 6/22/98
DES: jgdp
APPD:
REV: 1

PROJECT NO.:
M097-750
FIGURE NO.:
1



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Environmental Laboratory Services

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JUN 24 1998

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Delta Environmental
1756 114th Ave SE Ste 110
Bellevue, WA 98004

Project BOC Gases
Project Number: M097-750
Project Manager: James Peale

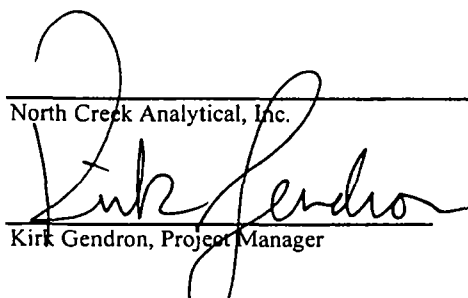
Sampled 6/1/98
Received 6/2/98
Reported 6/11/98 09:33

ANALYTICAL REPORT FOR SAMPLES:

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
MW-01	B806035-00	Water	6/1/98
MW-02	B806035-01	Water	6/1/98
MW-03	B806035-02	Water	6/1/98
MW-04	B806035-03	Water	6/1/98
MW-05	B806035-04	Water	6/1/98
MW-06	B806035-05	Water	6/1/98
MW-07	B806035-06	Water	6/1/98
MW-07D	B806035-07	Water	6/1/98

North Creek Analytical, Inc.

*The results in this report apply to the samples analyzed in accordance with the chain of custody document
This analytical report must be reproduced in its entirety.*


Kirk Gendron, Project Manager

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Project: BOC Gases
Project Number: M097-750
Project Manager: James Peale

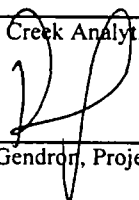
Sampled 6/1/98
Received 6/2/98
Reported: 6/11/98 09 33

Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended) North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
<u>MW-05</u>				<u>B806035-04</u>			<u>Water</u>	
Diesel Range Hydrocarbons	0680087	6/3/98	6/4/98		0.250	ND	mg/l	
Heavy Oil Range Hydrocarbons	"	"	"		0.750	ND	"	
Surrogate: 2-FBP	"	"	"	50 0-150		120	%	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions


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Delta Environmental	Project	BOC Gases	Sampled	6/1/98
1756 114th Ave SE Ste 110	Project Number.	M097-750	Received	6/2/98
Bellevue, WA 98004	Project Manager	James Peale	Reported	6/11/98 09:33

Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
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MW-01				B806035-00			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	0.00727	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00100	0.00182	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00900	"	
Selenium	"	"	"	EPA 6020	0.00100	0.00388	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0369	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	

MW-02				B806035-01			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	0.00331	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00100	0.00183	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	1
Nickel	"	"	"	EPA 6020	0.00100	0.0167	"	
Selenium	"	"	"	EPA 6020	0.00100	0.0231	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	1
Thallium	"	"	"	EPA 6020	0.00100	ND	"	1
Zinc	"	"	"	EPA 6020	0.00100	0.0251	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	0.00159	"	

MW-03				B806035-02			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00200	0.00343	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00100	0.00397	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	1
Nickel	"	"	"	EPA 6020	0.00100	0.0123	"	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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Delta Environmental
1756 114th Ave SE Ste 110
Bellevue, WA 98004

Project: BOC Gases
Project Number: M097-750
Project Manager: James Peale

Sampled: 6/1/98
Received: 6/2/98
Reported: 6/11/98 09 33

Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-03 (continued)				B806035-02			Water	
Selenium	0680228	6/5/98	6/8/98	EPA 6020	0.00200	0.0314	mg/l	
Silver	"	"	"	EPA 6020	0.00100	ND	"	1
Thallium	"	"	"	EPA 6020	0.00100	ND	"	1
Zinc	"	"	"	EPA 6020	0.00200	0.0272	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	0.00103	"	
MW-04				B806035-03			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	ND	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00100	0.00428	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00304	"	
Selenium	"	"	"	EPA 6020	0.00100	0.00137	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0310	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	
MW-05				B806035-04			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	0.00317	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	ND	"	
Copper	"	"	"	EPA 6020	0.00100	ND	"	
Lead	"	"	"	EPA 6020	0.00100	ND	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00213	"	
Selenium	"	"	"	EPA 6020	0.00100	0.00103	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0214	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	
MW-06				B806035-05			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	

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Delta Environmental
1756 114th Ave SE Ste 110
Bellevue, WA 98004

Project: BOC Gases
Project Number: M097-750
Project Manager: James Peale

Sampled: 6/1/98
Received: 6/2/98
Reported: 6/11/98 09 33

Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-06 (continued)				B806035-05			Water	
Arsenic	0680228	6/5/98	6/8/98	EPA 6020	0.00100	0.00451	mg/l	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	0.00139	"	
Copper	"	"	"	EPA 6020	0.00100	0.00173	"	
Lead	"	"	"	EPA 6020	0.00100	0.00186	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00402	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0266	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	
MW-07				B806035-06			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	0.00628	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	0.00169	"	
Copper	"	"	"	EPA 6020	0.00100	0.00347	"	
Lead	"	"	"	EPA 6020	0.00100	0.00419	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00549	"	
Selenium	"	"	"	EPA 6020	0.00100	ND	"	
Silver	"	"	"	EPA 6020	0.00100	ND	"	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0318	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	
MW-07D				B806035-07			Water	
Antimony	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Arsenic	"	"	"	EPA 6020	0.00100	0.00642	"	
Beryllium	"	"	"	EPA 6020	0.00100	ND	"	
Cadmium	"	"	"	EPA 6020	0.00100	ND	"	
Chromium	"	"	"	EPA 6020	0.00100	0.00106	"	
Copper	"	"	"	EPA 6020	0.00100	0.00395	"	
Lead	"	"	"	EPA 6020	0.00100	0.00391	"	
Nickel	"	"	"	EPA 6020	0.00100	0.00482	"	
Selenium	"	"	"	EPA 6020	0.00100	0.00109	"	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions.

Kirk Gendron, Project Manager

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Delta Environmental	Project	BOC Gases	Sampled	6/1/98
1756 114th Ave SE Ste 110	Project Number	M097-750	Received	6/2/98
Bellevue, WA 98004	Project Manager	James Peale	Reported	6/11/98 09 33

Dissolved Metals by EPA 6000/7000 Series Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
MW-07D (continued)				B806035-07			Water	
Silver	0680228	6/5/98	6/8/98	EPA 6020	0.00100	ND	mg/l	
Thallium	"	"	"	EPA 6020	0.00100	ND	"	
Zinc	"	"	"	EPA 6020	0.00100	0.0360	"	
Mercury	0680241	6/8/98	6/9/98	EPA 7470A	0.00100	ND	"	

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*Refer to end of report for text of notes and definitions

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Delta Environmental 1756 114th Ave SE Ste 110 Bellevue, WA 98004	Project BOC Gases Project Number. M097-750 Project Manager James Peale	Sampled 6/1/98 Received: 6/2/98 Reported: 6/11/98 09 33
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Conventional Chemistry Parameters by APHA/EPA Methods North Creek Analytical - Bothell

Analyte	Batch Number	Date Prepared	Date Analyzed	Specific Method	Reporting Limit	Result	Units	Notes*
<u>MW-01</u> pH	0680080	6/2/98	6/2/98	<u>B806035-00</u> EPA 150.1		9.73	<u>Water</u> pH Units	
<u>MW-02</u> pH	0680080	6/2/98	6/2/98	<u>B806035-01</u> EPA 150.1		12.2	<u>Water</u> pH Units	
<u>MW-03</u> pH	0680080	6/2/98	6/2/98	<u>B806035-02</u> EPA 150.1		12.4	<u>Water</u> pH Units	
<u>MW-04</u> pH	0680080	6/2/98	6/2/98	<u>B806035-03</u> EPA 150.1		6.90	<u>Water</u> pH Units	
<u>MW-05</u> pH	0680080	6/2/98	6/2/98	<u>B806035-04</u> EPA 150.1		7.81	<u>Water</u> pH Units	
<u>MW-06</u> pH	0680080	6/2/98	6/2/98	<u>B806035-05</u> EPA 150.1		7.37	<u>Water</u> pH Units	
<u>MW-07</u> pH	0680080	6/2/98	6/2/98	<u>B806035-06</u> EPA 150.1		7.44	<u>Water</u> pH Units	
<u>MW-07D</u> pH	0680080	6/2/98	6/2/98	<u>B806035-07</u> EPA 150.1		7.45	<u>Water</u> pH Units	

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

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Delta Environmental 1756 114th Ave SE Ste 110 Bellevue, WA 98004	Project: BOC Gases Project Number M097-750 Project Manager: James Peale	Sampled: 6/1/98 Received: 6/2/98 Reported: 6/11/98 09 33
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Diesel Hydrocarbons (C12-C24) and Heavy Oil (C24-C40) by WTPH-D (extended)/Quality Control
North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0680087										
Date Prepared: 6/3/98										
Extraction Method: EPA 3520C/600 Series										
Blank										
Diesel Range Hydrocarbons	6/4/98			ND	mg/l	0.250				
Heavy Oil Range Hydrocarbons	"			ND	"	0.750				
Surrogate: 2-FBP	"	0.320		0.373	"	50.0-150	117			
LCS										
0680087-BL1										
Diesel Range Hydrocarbons	6/4/98	2.00		2.04	mg/l	60.0-140	102			
Surrogate: 2-FBP	"	0.320		0.426	"	50.0-150	133			
Duplicate										
0680087-DUP1										
B806035-04										
Diesel Range Hydrocarbons	6/4/98		ND	ND	mg/l			44.0		
Surrogate: 2-FBP	"	0.605		0.717	"	50.0-150	119			

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

Kirk Gendron, Project Manager

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NORTH CREEK ANALYTICAL

Environmental Laboratory Services

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SPOKANE ■ (509) 924-9200 ■ FAX 924-9290
PORTLAND ■ (503) 906-9200 ■ FAX 906-9210

Delta Environmental 1756 114th Ave SE Ste 110 Bellevue, WA 98004	Project. BOC Gases Project Number M097-750 Project Manager. James Peale	Sampled: 6/1/98 Received 6/2/98 Reported: 6/11/98 09 33
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Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recovery Limits	Recovery %	RPD Limit	RPD %	Notes*
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Batch: 0680228

Date Prepared: 6/5/98

Extraction Method: EPA 3020A

Blank

0680228-BLK1

Antimony	6/5/98		ND	mg/l	0.00100					
Arsenic	"		ND	"	0.00100					
Beryllium	"		ND	"	0.00100					
Cadmium	"		ND	"	0.00100					
Chromium	"		ND	"	0.00100					
Copper	"		ND	"	0.00100					
Lead	"		ND	"	0.00100					
Nickel	"		ND	"	0.00100					
Selenium	"		ND	"	0.00100					
Silver	"		ND	"	0.00100					
Thallium	"		ND	"	0.00100					
Zinc	"		0.00164	"	0.00100					

2

LCS

0680228-BS1

Antimony	6/5/98	0.0500	0.0490	mg/l	80.0-120	98.0
Arsenic	"	0.200	0.203	"	80.0-120	101
Beryllium	"	0.200	0.202	"	80.0-120	101
Cadmium	"	0.200	0.199	"	80.0-120	99.5
Chromium	"	0.200	0.202	"	80.0-120	101
Copper	"	0.200	0.199	"	80.0-120	99.5
Lead	"	0.200	0.204	"	80.0-120	102
Nickel	"	0.200	0.199	"	80.0-120	99.5
Selenium	"	0.200	0.201	"	80.0-120	101
Silver	"	0.200	0.196	"	80.0-120	98.0
Thallium	"	0.0500	0.0513	"	80.0-120	103
Zinc	"	0.200	0.201	"	80.0-120	101

Duplicate

0680228-DUP1

B806035-07

Antimony	6/8/98	ND	ND	mg/l		20.0
Arsenic	"	0.00642	0.00648	"		20.0 0.930
Beryllium	"	ND	ND	"		20.0
Cadmium	"	ND	ND	"		20.0
Chromium	"	0.00106	0.00105	"		20.0 0.948
Copper	"	0.00395	0.00406	"		20.0 2.75
Lead	"	0.00391	0.00417	"		20.0 6.44
Nickel	"	0.00482	0.00488	"		20.0 1.24
Selenium	"	0.00109	ND	"		20.0

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NORTH CREEK ANALYTICAL

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Delta Environmental 1756 114th Ave SE Ste 110 Bellevue, WA 98004	Project BOC Gases Project Number: M097-750 Project Manager James Peale	Sampled 6/1/98 Received 6/2/98 Reported 6/11/98 09.33
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Dissolved Metals by EPA 6000/7000 Series Methods/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Duplicate (continued)										
	0680228-DUP1		B806035-07							
Silver	6/8/98		ND	ND	mg/l			20.0		
Thallium	"		ND	ND	"			20.0		
Zinc	"		0.0360	0.0363	"			20.0	0.830	
Matrix Spike										
	0680228-MS1		B806035-07							
Antimony	6/8/98	0.0500	ND	0.0515	mg/l	75.0-125	103			
Arsenic	"	0.200	0.00642	0.245	"	75.0-125	119			
Beryllium	"	0.200	ND	0.219	"	75.0-125	109			
Cadmium	"	0.200	ND	0.211	"	75.0-125	105			
Chromium	"	0.200	0.00106	0.203	"	75.0-125	101			
Copper	"	0.200	0.00395	0.204	"	75.0-125	100			
Lead	"	0.200	0.00391	0.205	"	75.0-125	101			
Nickel	"	0.200	0.00482	0.199	"	75.0-125	97.1			
Selenium	"	0.200	0.00109	0.260	"	75.0-125	129			3
Silver	"	0.200	ND	0.166	"	75.0-125	83.0			
Thallium	"	0.0500	ND	0.0518	"	75.0-125	104			
Zinc	"	0.200	0.0360	0.250	"	75.0-125	107			
Matrix Spike										
	0680228-MS2		B806035-07							
Selenium	6/8/98	1.00	0.00109	1.13	mg/l	75.0-125	113			
Batch: 0680241										
Blank										
	0680241-BLK1									
Mercury	6/9/98			ND	mg/l	0.00100				
LCS										
	0680241-BS1									
Mercury	6/9/98	0.00500		0.00509	mg/l	70.0-130	102			
Matrix Spike										
	0680241-MS1		B806035-02							
Mercury	6/9/98	0.00500	0.00103	0.00548	mg/l	75.0-125	89.0			
Matrix Spike Dup										
	0680241-MSD1		B806035-02							
Mercury	6/9/98	0.00500	0.00103	0.00545	mg/l	75.0-125	88.4	20.0	0.676	

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Delta Environmental	Project: BOC Gases	Sampled 6/1/98
1756 114th Ave SE Ste 110	Project Number: M097-750	Received 6/2/98
Bellevue, WA 98004	Project Manager: James Peale	Reported 6/11/98 09.33

Conventional Chemistry Parameters by APHA/EPA Methods/Quality Control North Creek Analytical - Bothell

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Reporting Limit Units	Recovery Limits	Recovery %	RPD Limit	RPD %	Notes*
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Batch: 0680080

Date Prepared: 6/2/98

Extraction Method: General Preparation

Duplicate

0680080-DUP1

B806039-00

pH

6/2/98

7.78

7.90

pH Units

10.0

1.53

North Creek Analytical, Inc.

*Refer to end of report for text of notes and definitions

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NORTH CREEK ANALYTICAL

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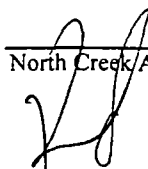
Delta Environmental 1756 114th Ave SE Ste 110 Bellevue, WA 98004	Project: BOC Gases Project Number: M097-750 Project Manager: James Peale	Sampled: 6/1/98 Received: 6/2/98 Reported: 6/11/98 09.33
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Notes and Definitions

#	Note
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- 1 Unable to quantify due to matrix interference.
 - 2 Suspected analyte contamination in the blank.
 - 3 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- Recov. Recovery
- RPD Relative Percent Difference

North Creek Analytical, Inc.


Kirk Gendron, Project Manager

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CHAIN OF CUSTODY REPORT

Work Order #: *B806035*

CLIENT: <i>Delta Environmental</i> ADDRESS: <i>1756 114th Ave SE Bellevue WA 98004</i> PHONE: <i>425 450 7726</i> FAX: <i>- 8857</i>			REPORT TO: <i>Delta</i> ATTENTION: <i>James Peck</i> BILLING TO: <i>Delta</i> P.O. NUMBER: NCA QUOTE #:			TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 5 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 Fuels & Hydrocarbon Analyses <input type="checkbox"/> 5 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 OTHER Specify:				
PROJECT NAME: <i>BOC Gases</i> PROJECT NUMBER: <i>1097750</i> SAMPLED BY: <i>J. Peck</i>			Analysis Request: <div style="border: 1px solid black; padding: 5px; transform: rotate(-45deg); display: inline-block;"> <i>Ass PM Metals</i> <i>PH</i> <i>TPH-Delt</i> </div>			* Turnaround Requests less than standard may incur Rush Charges				
NCA SAMPLE NUMBER	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE / TIME						MATRIX (W, S, O)	# OF CONTAINERS	COMMENTS & PRESERVATIVES USED
<i>B806035 - 00</i>	<i>1. MW-01</i>	<i>6.1.98/1045</i>	<i>K</i>	<i>K</i>				<i>W</i>	<i>2</i>	<i>HNO₃ for metals</i>
<i>-01</i>	<i>2. MW-02</i>	<i>1145</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
<i>-02</i>	<i>3. MW-03</i>	<i>1125</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
<i>-03</i>	<i>4. MW-04</i>	<i>1020</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
<i>-04</i>	<i>5. MW-05</i>	<i>850</i>	<i>K</i>	<i>K</i>	<i>X</i>			<i>↓</i>	<i>4</i>	
<i>-05</i>	<i>6. MW-06</i>	<i>955</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
<i>-06</i>	<i>7. MW-07</i>	<i>920</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
<i>-07</i>	<i>8. MW-07D</i>	<i>920</i>	<i>↓</i>	<i>↓</i>				<i>↓</i>		
	<i>9.</i>									
	<i>10.</i>									

RELINQUISHED BY: <i>Matti Dail</i>	DATE: <i>6/2/98</i>	RECEIVED BY: <i>KBarker</i>	DATE: <i>6/2/98</i>
PRINT NAME: <i>Matti Dail</i> FIRM: <i>Delta</i>	TIME: <i>12:00</i>	PRINT NAME: <i>KBarker</i> FIRM: <i>NCA</i>	TIME: <i>1200</i>
RELINQUISHED BY: <i>KBarker</i>	DATE: <i>6/2/98</i>	RECEIVED BY: <i>Cathy Nichols</i>	DATE: <i>6/2/98</i>
PRINT NAME: <i>KBarker</i> FIRM: <i>NCA</i>	TIME: <i>1330</i>	PRINT NAME: <i>Cathy Nichols</i> FIRM: <i>NCA B</i>	TIME: <i>1330</i>

ADDITIONAL REMARKS: *2.4 N/A*